INTRINSICALLY SAFE PRESSURE TRANSMITTER ATM/Ex

Features

- Compact and robust stainless steel assembly 1.4435 (316L)
- Piezoresistive measuring element
- Standard DIN pressure ranges from 0...100mbar to 0...1000bar
- Calibration available for all common pressure units
- Reverse polarity and short circuit protected
- Medium temperature up to 150 °C (option)
- Surge (lightning) protection according to EN 61000-4-5 (option)

Typical applications

In hazardous areas

- Industrial process control
- Mining
- Food industry
- Test and Monitoring

Specifications

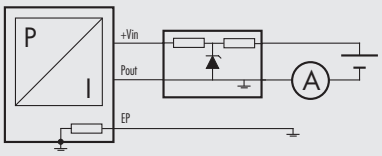
Pressure range [bar]		0.1 … 0.5	> 0.5 … 2	> 2 … 25	> 25 … 600	> 600 … 1000
Overpressure		3bar	3 x FS (min. 3 bar)	3 x FS	3 x FS (max. 850bar, optional 1500bar)	1500 bar
Burst pressure	[bar]	> 200	> 200	> 200	> 850 (optional 1500bar)	1500
Accuracy[1]	[± % FS]	≤ 0.5 (optional ≤ 0.25)	≤ 0.5 (optional ≤ 0.25/≤ 0.1)	≤ 0.5 (optional ≤ 0.25/≤ 0.1)	≤ 0.5 (optional ≤ 0.25/≤ 0.1)	≤ 1 (optional ≤ 0.5/≤ 0.25)
Thermal shift	[± % FS/°C]					
Zero	0…70°C	≤ 0.06	≤ 0.03	≤ 0.015	≤ 0.015	≤ 0.015
	-25…85°C	≤ 0.08	≤ 0.04	≤ 0.02	≤ 0.02	≤ 0.02
Span	0…70°C	≤ 0.015	≤ 0.015	≤ 0.015	≤ 0.015	≤ 0.015
	-25…85°C	≤ 0.02	≤ 0.02	≤ 0.02	≤ 0.02	≤ 0.02
Response time		< 1 ms/10…90% FS				
Long term stability (1 year) - (typ./max.)		<0.5% FS/< 4mbar	<0.2% FS/< 4mbar	<0.1% FS/< 0.2% FS	<0.1% FS/< 0.2% FS	<0.1% FS/< 0.2% FS

Electrical connection

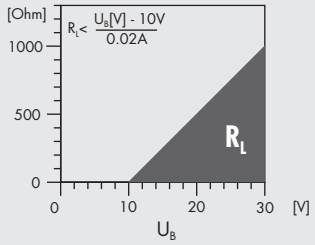
Type 4...20mA
Two wire current transmitter

Supply voltage 10…30V DC
Supply voltage influence < 0.1% FS

Circuit diagram



Load resistance



Load resistance influence < 0.1% FS

Ex-Approval

Type of protection Certificate SEE 99 ATEX 2640	I/II M1/1G EEx IIC T3…T6	Ex-Approval for gas and mines
	II 1D T90°C IP68	Ex-Approval for dust
Standards	EN 50303	special requirements in mines
	EN 50 014	general requirements
	EN 50 020	intrinsic safety "i"
	EN 50 284	special requirements zone 0
Max. values for supply/output circuit	30V / 100mA / 1W	zener barrier

Temperature class		**T6**	**T4**	**T3**
Ambient temperature Ta	[°C]	-25…55	-25…85	-25…85
Process temperature	[°C]	-25…55	-25…100	-25…150

Without any information about temperature class the transmitter will be delivered for gas.

Materials

Process connection, diaphragm, housing Stainless steel 1.4435 (316L), other materials (e.g. titanium) on request
Seals (standard) Viton (other materials see ordering information)

Electromagnetic compability

Standard		Level	Typical interferences
Emission:			
EN 61000-6-3	Generic emission standard		
EN 55022	Emission, class B		
Immunity:			
EN 61000-6-2	Generic immunity		
EN 61000-4-2	Electrostatic discharge	4kV contact, 8kV air	
EN 61000-4-3	Radiated electro-magnetic field	10V/m, 80-1000MHz, 80% AM 1kHz	Cellular phones, radio sets
EN 61000-4-3	Radiated electro-magnetic field (GSM)	10V/m, 950MHz, 200Hz on/off	Digital portable phones
EN 61000-4-4	Fast transients (burst)	2kV	Motors, valves
EN 61000-4-6	Conducted radio-frequency	10V, 0.15-80MHz, 80% AM 1kHz	Cellular phones, radio sets
EN 61000-4-5	Surge	10kA (8/20µs)[2]	Lightning strikes

[1] Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

[2] Only with optional surge (lightning) protection

CE

Ordering Information

				33	X	. XXXX	. XXXX	. XX	. XXX
Type	ATM/Ex			33					
Pressure type	Gauge				1				
	Absolute				2				
	Sealed gauge				3				
Pressure range	0…100 mbar					00			
	0…160 mbar					01			
	0…250 mbar					02			
	0…400 mbar					03			
	0…600 mbar					04			
	0…1.0 bar					05			
	0…1.6 bar					06			
	0…2.5 bar					07			
	0…4.0 bar					08			
	0…6.0 bar					09			
	0…10 bar					10			
	0…16 bar					11			
	0…25 bar					12			
	0…40 bar				3	13			
	0…60 bar				3	14			
	0…100 bar				3	15			
	0…160 bar				3	16			
	0…250 bar				3	17			
	0…400 bar				3	18			
	0…600 bar				3	19			
	0…1000 bar				3	20			
	Special calibration					99			
Process connection	G 1/4 female	(Fig. 1)				00			
	G 1/4 M	(Fig. 2)				11			
	G 1/4 M, Manometer DIN 16288	(Fig. 3)				12			
	G 1/2 M	(Fig. 4)				13			
	G 1/2 M, frontal diaphragm	(Fig. 5)				14			
	G 1/2 M, flush diaphragm	(Fig. 6)				15			
	G 1/2 M, Manometer DIN 16288	(Fig. 7)				16			
	1/4 NPT M					10			
	1/2 NPT M	(Fig. 8)				19			
	Special process connection					99			
Electrical connection	Connector DIN 43650 (screwed on[3]) [5]	(Fig. 10)	IP 65				01		
	Connector Binder 723, 5-pin [5]	(Fig. 11)	IP 67				03		
	Connector Binder 723, 5-pin (screwed on[3]) [5]	(Fig. 12)	IP 67				43		
	Connector MIL C26482, (10-6) [5]	(Fig. 13)	IP 40				06		
	PUR cable, blue [6]	(Fig. 14)	IP 67				17		
	Teflon cable, blue [6]	(Fig. 14)	IP 67				22		
	Special electrical connection						99		
Output signal	4…20 mA							05	
	4…20 mA surge (lightning) protection							08	
Accuracy	≤ ± 0.5% FS							0	
	≤ ± 0.25% FS							1	
	≤ ± 0.1% FS (on request)							2	
Temperature class	T6	(Ta: -25…55°C comp.)						0	
	T4	(Ta: -25…85°C comp.)						1	
	T3	(Ta: -25…85°C comp., max. media temp. 150°C)						2	
Options	Throttle [4]								A
	Special oil filling in the TD: ASEOL Food								G
	Halocarbon (for oxygen applications) [7]								H
	Seals: Viton (standard)								U
	EPDM								S
	Kalrez								T
	Special options								Z
	Version titanium								K

[3] Zero offset and span adjustable (approx. ± 5%)
[4] Available only with fig. 2, fig. 4 or fig. 7
[5] Cable socket connector not included
[6] Please specify the required cable length
[7] max. pressure range ... 120 bar (burst pressure > 175 bar)

Pressure connections

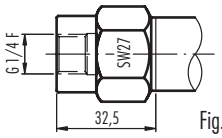


Fig. 1

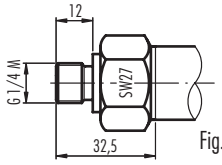


Fig. 2

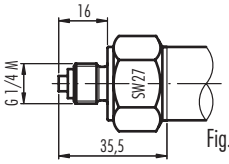


Fig. 3

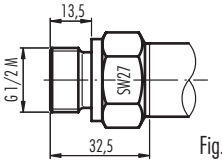


Fig. 4

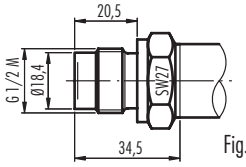


Fig. 5

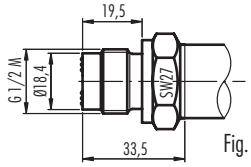


Fig. 6

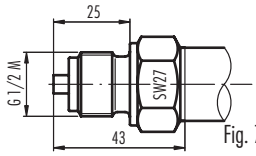


Fig. 7

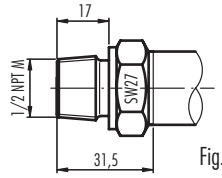
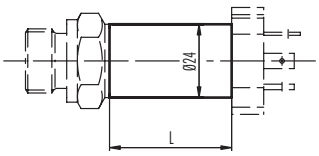


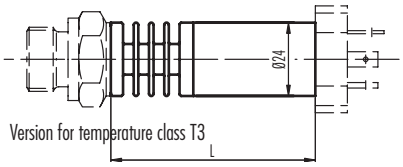
Fig. 8

Dimensions

Version for temperature class T4…T6



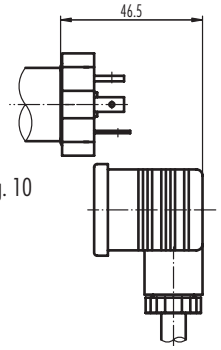
L = 55mm for connector DIN 43650 (Fig. 10)
L = 94mm for version with surge (lightning) protection



Version for temperature class T3

L = 82mm for connector DIN 43650 (Fig. 10)
L = 121mm for version with surge (lightning) protection

Electrical connections



Pin

1	+Vin
2	Pout
⏚	EP

Fig. 10

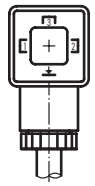
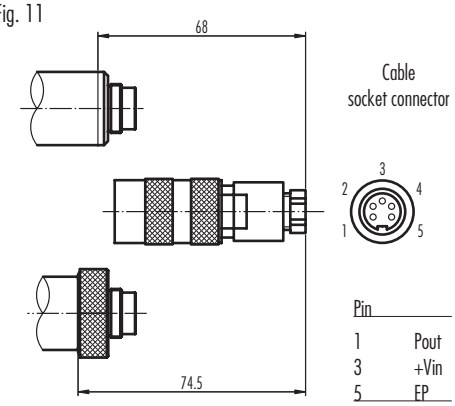


Fig. 11



Cable
socket connector

Pin

1	Pout
3	+Vin
5	EP

Fig. 12

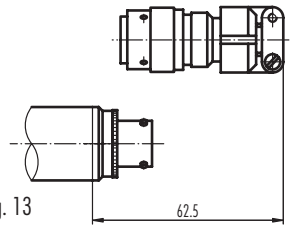


Fig. 13

Cable
socket connector

Pin

A	+Vin
C	Pout
F	EP

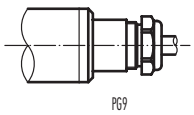


Fig. 14

Colour

white	+Vin
yellow	Pout
grey	EP

Specifications may change without notice.

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